IN THE SPECIFICATION:

Please replace paragraph [0001] on page 1, with the following amended paragraph:

The present ~~invention~~ disclosure generally relates to titanium alloys and methods of making the same, and more particularly relates to the direct fabrication of parts from titanium alloys.

Please replace paragraph [0007] on page 2, with the following amended paragraph:

Accordingly, it is desirable to provide a method for fabricating parts made of titanium or titanium alloys. In addition, it is desirable to provide such a method that is inexpensive and efficient. Furthermore, other desirable features and characteristics of the present ~~invention~~ disclosure will become apparent from the subsequent detailed description and the appended claims, taken in conjunction with the accompanying drawings and the foregoing technical field and background.

Please replace paragraph [0011] on page 3, with the following amended paragraph:

The present ~~invention~~ disclosure will hereinafter be described in conjunction with the following drawing figures, wherein like numerals denote like elements, and

Please replace paragraph [0012] on page 3, with the following amended paragraph:

FIG. 1 is a schematic illustration of the SLS process and liquid metal sintering process for forming a metal part according to an embodiment of the ~~invention~~ disclosure.

Please replace paragraph [0013] on page 3, with the following amended paragraph:

The following detailed description is merely exemplary in nature and is not intended to limit the invention or the application and uses of the ~~invention~~ <u>disclosure</u>. Furthermore, there is no intention to be bound by any expressed or implied theory presented in the preceding technical field, background, brief summary or the following detailed description.

Please replace paragraph [0014] beginning on page 3, with the following amended paragraph:

The present ~~invention~~ <u>disclosure</u> includes a DMF method for forming parts made from titanium or titanium alloys. The DMF process illustrated in FIG. 1 uses an SLS apparatus 20 to fabricate a preform part, hereinafter referred to as a green part 10. The SLS machine 20 includes a working surface 23 that includes a platform 21 on which a green part is formed layer-by-layer from a metal powder 25. The platform 21 may be constructed to descend into a cavity 22 as incremental layers of powder 25 are applied onto previously formed layers. The individual powder layers may be applied using a roller 24 or other known means for applying a uniform powder layer. The cavity 22 may be heated using coils or other heating means to maintain the powder 25 at a uniform temperature. Each powder layer is typically less than about 0.050 inch, and is preferably between about 0.010 inch and 0.020 inch. After each layer of powder 25 is applied onto the platform 21, a laser 26 is used to selectively melt an alloying component in the powder 25 in accordance with three-dimensional CAD data supplied by a computer processor 30. The melted alloying component interdiffuses with the surrounding metal powder and re-solidifies, causing the metal particles to be held together to form a green part layer. The metal particles in the layer are also joined to previously formed layers of the green part 10 as a result of the reaction with the alloying component. Layer formation as described above is repeated iteratively until the green part 10 is completely formed.

Please replace paragraph [0016] beginning on page 4, with the following amended paragraph:

According to an exemplary embodiment of the ~~invention~~ disclosure, the alloying component in the powder 25 includes a titanium-copper-nickel alloy that is blended with the structural metal. An exemplary titanium-copper-nickel alloy includes between about 12 wt.% and about 17 wt.% copper, and between about 12 wt.% and about 17 wt.% nickel, with the balance essentially being titanium. A preferred embodiment includes about 15 wt.% copper and about 15 wt.% nickel with the balance essentially being titanium. This alloy (Ti-Cu-Ni) is included in the powder 25 having a particle size of -240 mesh in an exemplary embodiment of the invention, and preferably -325 mesh. The Ti-Cu-Ni alloy melts at about 1700 °F, which is much lower than the melting point for elemental titanium (about 3020 °F). Consequently, the laser selectively heats precise, localized portions of the powder 25 to a temperature of at least 1700 °F during the sintering procedure. The laser scans the powder 25 as directed by the computer processor 30 in accordance with three-dimensional CAD data. The laser may be emitted in the infrared or near infrared ranges, although any focused beam of energy, such as an electron beam, that is sufficiently intense to generate precise, localized heating may be used. The alloying component rapidly melts, and then rapidly re-solidifies to bind the titanium or titanium alloy constituents of the powder with connecting necks or bridges between metal particles. The green part 10 has a density that is between about 60% and about 70% of the final part density.

Please replace paragraph [0017] on page 5, with the following amended paragraph:

According to another exemplary embodiment of the ~~invention~~ disclosure, the powder 25 further includes elemental tin. Tin has a melting point about 449 °F, which is about the same as the nylon 12 binder used in the prior DMF method described as part of the background of the present invention. Consequently, the SLS step of the embodiment utilizing tin as the alloying component is effectively similar to that of the background DMF method. The laser selectively heats portions of the powder 25 to a temperature of only about 449 °F or slightly higher.